

WHAT IS CLAIMED IS:

1. A composition to contact a breast nipple and to prepare a breast for ductal fluid
5 collection comprising, in bioactive amounts, two or more of the following: an
anesthetic agent, a detergent, an exfoliating agent, an antiseptic agent, a
dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing
agent, muscle-constricting agent, a lactation-stimulating agent, a secretion-
stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a
10 calcium channel blocker, a dye or stain to mark the nipple surface excluding
ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or
stain to mark a ductal orifice.
2. A method of preparing a breast for ductal fluid collection comprising:
15 contacting the nipple surface with a composition comprising an anesthetic and
one or more of a detergent, an exfoliating agent, an antiseptic agent, a
dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing
agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-
stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a
20 calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal
orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to
mark a ductal orifice for sufficient time to allow the composition to take effect on
the nipple surface.
- 25 3. A method of preparing a breast duct for access and ductal fluid collection
comprising:
contacting a ductal orifice with a tip of a ductal access tool coated with a
composition comprising one or more of an anesthetic, a detergent, an exfoliating
agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-
30 dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating
agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a

beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

- 5 4. A method of preparing a breast duct for access and ductal fluid collection comprising:

contacting a ductal orifice with a tip of a ductal access tool coated with a composition comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-
10 dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice; and
15 infusing a solution comprising an anesthetic into the duct through a lumen of the ductal access tool.

5. A method of preparing a breast duct for access and ductal fluid collection comprising infusing a solution comprising an anesthetic and one or more of an
20 oncotic agent, an osmotic agent, oxytocin, prolactin, a ductal orifice-dilating agent, a vaso-dilator, a vaso-constrictor, a muscle-relaxant, a muscle-constrictor, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

25

6. A system comprising:
an aliquot of a bioactive composition comprising a mixture of one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-
30 constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker,

a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice, in a formulation to contact a nipple surface.

- 5 7. A system of claim 6, wherein the formulation comprises a powder, a viscous semi-liquid, a foam, a gel, a liquid, or a gas.

8. A system as in claim 6, further comprising a pad of a geometry to circumscribe a breast nipple to enclose a bioactive agent in contact with a nipple surface and cover
10 the nipple surface for sufficient time for the bioactive agent to act on the nipple surface.

9. A system comprising a ductal access tool and a composition of a formulation capable of coating a tip of the tool to contact a ductal orifice, said composition
15 comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker, a dye or stain to mark the nipple surface
20 excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

10. A system comprising a ductal access tool preloaded with a solution comprising an anesthetic for infusion into an accessed breast duct and a composition of a
25 formulation capable of coating a tip of the tool comprising one or more of an anesthetic, a detergent, an exfoliating agent, an antiseptic agent, a dekeratinizing agent, an orifice-dilating agent, a vaso-dilator, a muscle-relaxing agent, a muscle-constricting agent, a lactation-stimulating agent, a secretion-stimulating agent, a sphincter-relaxer, an anti-ischemic agent, a beta-blocker, a calcium channel blocker,
30 a dye or stain to mark the nipple surface excluding ductal orifices, a dye or stain to mark a perimeter of a ductal orifice, and a dye or stain to mark a ductal orifice.

11. A method of preparing a patient for a breast duct fluid collection comprising one or more of applying acupuncture, directing meditation, playing music, applying heat to the breast, warming a room where the patient waits, warming a table or chair where the patient lies or sits, covering the patient with a
- 5 warm blanket.